Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	
Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems	ET Docket No. 00-258
Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use By The Mobile-Satellite Service	ET Docket No. 95-18
The Establishment of Polices and Service Rules for The Mobile-Satellite Service in the 2 GHz Band	IB Docket No. 99-81
Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service	RM-9498
Petition for Rule Making of UTStarcom, Inc. Concerning the Unlicensed Personal Communications Service	RM-10024

REPLY COMMENTS OF AVAYA INC.

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Avaya Inc. ("Avaya"), formerly the Enterprise Network Group of Lucent Technologies, respectfully submits its reply comments in response to the Federal Communications Commission's Further Notice of Proposed Rule Making ("FNPRM") in the above-captioned dockets. As discussed herein, the record confirms Avaya's contentions that reallocation of the unlicensed PCS ("UPCS") bands for 3G services or relocation use is both contrary to the public interest and technologically unsound.

I. INTRODUCTION AND SUMMARY.

Avaya, a leading provider of communications systems and software, including UPCS devices, was joined by others in the UPCS industry in confirming the crucial role played by UPCS devices in meeting critical communications needs. The comments revealed widespread support for maintaining the present allocation of 1910-1930 MHz for UPCS applications. Increased flexibility to deploy isochronous devices in the 1910-1920 MHz band, as sought in the WINForum Petition, would further enhance the industry's ability to reach its full potential.

The record also demonstrates widespread recognition that reallocation of the 1910-1920 and 1920-1930 MHz bands in support of 3G is not appropriate or technically feasible. Use of the UPCS band for either of these purposes would frustrate the UPCS industry's legitimate reliance on continued use of the band to obtain a return on their equipment development investments; reliance that was induced by the FCC's express policies. Reallocation of the UPCS band would also severely injure UPCS customers, many of whom have made considerable investments to deploy highly integrated UPCS communications systems in mission critical applications. For many of these customers, reallocation would entail the complete replacement of all of their UPCS equipment, at substantial cost and with severe disruption of service. As the initial comments demonstrate, this would seriously harm customer relationships, dealing a significant, and potentially fatal, blow to the UPCS industry. Finally, numerous parties described the technological limitations of this spectrum, which serves as a necessary guard band for licensed PCS. In accordance with the record in this proceeding, Avaya urges the FCC to expeditiously remove 1910-1930 MHz from consideration for 3G services or relocation use and instead grant the flexibility needed to permit the UPCS industry to realize its full potential.

II. THE RECORD REVEALS EXTENSIVE SUPPORT FOR MAINTAINING THE 1910-1930 MHZ BANDS FOR UNLICENSED DEVICES, WITH INCREASED FLEXIBILTY TO TAKE FULL ADVANTAGE OF THAT SPECTRUM.

A. Commenters Confirm That UPCS Spectrum Usage is Flourishing, Rebutting Speculation That the Spectrum is "Underutilized."

The initial comments demonstrate an impressive record of growth in the nascent UPCS industry, notwithstanding the substantial hurdles UPCS manufacturers face. UPCS manufacturers are subject to uniquely complex and burdensome regulations governing the deployment of their systems.[1] Further, regulatory uncertainty and the need to relocate incumbent microwave licensees stifled the initial growth of the UPCS market. As NEC notes, "[i]t was not until 1999" that UPCS devices "had a level playing field" on which to compete.[2] Once on a level playing field, however, the market has thrived. UPCS experienced 31% growth in 2000, compared to 27% growth in CMRS during the same period.[3] Avaya joins NEC in noting that, "[i]n the past, the Commission has found that nascent, developing industries should not be targeted for reallocation."[4] Consistent with this established principle, the FCC should not mandate relocation of nascent UPCS operations.

Today, UPCS systems are widely deployed, serving varied communications needs. Motorola observes that the UPCS "band is serving a large, diverse, and fast growing community of end users," and that "[t]oday, more than 400,000 users depend on isochronous devices."[5] Indeed, as Avaya stated in its opening comments, traffic on the isochronous band is near

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1 Comments of Avaya at 4-5 ("Avaya Comments"); Comments of Wireless Information Networks Forum at 4-5 ("WINForum Comments"); Comments of NEC America, Inc. at 1-14 ("NEC Comments").

2 NEC Comments at 13. *See also* Comments of Motorola , Inc. at 20 ("Motorola Comments").

3 NEC Comments at 10.

4 NEC Comments at 13.

5 Motorola Comments at 19-20.

saturation in some areas.[6] This evidence clearly rebuts the supposition relied upon by commenters seeking to relocate to the UPCS band that the UPCS spectrum is underutilized.[7]

Moreover, the record demonstrates that unlicensed PCS customers rely on UPCS systems for mission critical needs. Numerous hospitals use Avaya's UPCS systems to meet the needs of doctors, nurses, and other staff for quick and reliable communications in emergency situations, as well as for routine matters.[8] Indeed, UPCS systems are particularly appropriate for hospitals where, as Nortel notes, "reliable service with low power operation is necessary to preclude interference to sensitive medical instruments."[9] UTAM cites other important uses of UPCS systems, including public safety uses by governments in disaster situations, in nuclear power plants, and in prisons; use for communications on college campuses, company warehouses, and convention centers; and use in facilitating trading on all U.S. stock and commodity exchanges.[10] Thus, contrary to the dismissive attitude of some commenters,[11] UPCS systems meet significant business, medical, and public safety needs.

B. The Commission Should Increase Manufacturers' and Customers' Flexibility in Utilizing the UPCS Band, Consistent With the WINForum Petition.

Avaya reaffirms its support for the WINForum Petition, which would permit the entire 20 MHz UPCS band to be used by isochronous devices. The comments demonstrated widespread

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6 Avaya Comments at 5. Similarly, Nortel Networks, which has 100,000 isochronous UPCS users, states that the isochronous band "has already reached saturation of traffic" in some areas. Comments of Nortel Networks, Inc. at 4 ("Nortel Comments").

7 FNPRM at ¶ 10; Comments of the Ad Hoc MDS Alliance at 20 ("Ad Hoc Comments"); Comments of Arraycomm, Inc. at 5 ("Arraycomm Comments").

8 Avaya Comments at 5.

9 Nortel Comments at 4.

10 Comments UTAM, Inc. at 8-9 ("UTAM Comments").

11 *See, e.g.*, Ad Hoc Comments at 21.

recognition of the potential benefits of increased flexibility in the regulation of the UPCS band.[12] Motorola explains that the additional 10 MHz of spectrum "is needed to meet the demand for isochronous UPCS service" in high-density areas; additionally, "many potential isochronous UPCS applications are constrained by the availability of only 10 MHz of spectrum."[13] NEC describes several circumstances in which the additional 10 MHz will allow service to new customers, including customers with high user densities in large, open spaces, and customers requiring "significantly higher data rates," or seeking "data and voice on a converged wireless platform."[14] Thus, as WINForum concludes, "the additional 10 MHz of spectrum available from cross-over use of the 1910-1920 MHz band would confer substantial long-term benefits, particularly in high-density areas such as multi-tenant high-rises and industrial parks."[15] In light of the substantial record of anticipated benefits, the Commission should promptly grant WINForum's Petition.

III. REALLOCATION OF THE 1910-1930 MHZ BANDS FOR PURPOSES OTHER THAN UPCS WOULD BE CONTRARY TO PUBLIC POLICY AND WOULD BE TECHNOLOGICALLY INFEASIBLE.

A. Reallocation of the UPCS Band Would Frustrate Manufacturers' and Customers' Legitimate Expectations, and Could Jeopardize the Future of the UPCS Industry.

Reallocation of the UPCS band would be directly contrary to the legitimate expectations of manufacturers and customers who have heavily invested in UPCS in reliance on express FCC policies. Among other things, relocation incident to any reallocation of the band would necessarily entail severe disruption as customers are forced to replace all of their UPCS

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12 Avaya Comments at 5; Motorola Comments at 20-21; NEC Comments at 25; Comments of the Rural Telecommunications Group at 6.

13 Motorola Comments at 20-21.

14 NEC Comments at 25.

15 WINForum Comments at 8.

equipment. As discussed below, any such disruption will, at a minimum, cause irreparable damage to the business reputations of UPCS manufacturers and, because many of those manufacturers are dependant upon UPCS lines, could well destroy parts of the industry.[16]

Avaya and other UPCS manufacturers believe that their expectation that the FCC will adhere to its commitment to the industry is legitimate and well founded. The FCC induced the UPCS industry to invest hundreds of millions of dollars to clear incumbent microwave licensee and to develop and deploy products. In their initial comments, Avaya and others detailed challenges to deployment of UPCS devices, which required manufacturers to invest considerable amounts of money to develop the necessary technologies, features, and procedures to utilize this band.[17] Avaya reiterates its concern that reallocation of the isochronous band at this time, after so much financial and technical resources have been invested in UPCS technology, would deal the industry an unexpected and potentially fatal blow.

Further, the forced relocation of UPCS equipment to new spectrum, such as that proposed by the Ad Hoc MDS Alliance, would have disastrous consequences for hundreds of thousands of UPCS customers. Contrary to the Ad Hoc MDS Alliance's unsupported implication that UPCS customers can easily afford the cost of replacing their systems,[18] many schools, hospitals, state and local governments, and small businesses are likely to find the cost of replacing their UCPS systems prohibitive.[19] It is irrational that the FCC would even consider reallocating UPCS systems serving critical functions to accommodate the entertainment services provided by MDS

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16 *See, e.g.*, Avaya Comments at 8-9; NEC Comments at 17-19; WINForum Comments at 6.

17 Comments of Avaya at 5-6 ("Avaya Comments"); *see also* Comments of NEC America, Inc. at 15-16 ("NEC Comments") ("Relying on . . . unambiguous statements of commitment to the development of a UPCS market, NEC and others invested significant amounts of capital into the research, development and marketing of UPCS devices. Likewise, thousands of enterprises made good faith investments in UPCS products, attracted by the promise of reliable communications due to the special spectrum allocation and rules for UPCS devices.").

18 Ad Hoc Comments at 15-16.

19 Avaya Comments at 6.

operators—many of whom appear to be revising their business plans in any event. Notably, Sprint has suspended its efforts to acquire new fixed wireless customers,[20] while AT&T is exiting the fixed wireless business completely.[21]

In addition to the substantial economic costs, UPCS users will face intolerable service disruptions.[22] UPCS reallocation would generally entail the wholesale replacement of every piece of equipment – from transmitters to PBXs to the handset of every UPCS users.[23] As Avaya stated in its initial comments, this is equivalent to requiring consumers to accomplish the infeasible tasks of completely replacing their communications systems while simultaneously conducting normal business operations.[24] Ironically, the Ad Hoc MDS Alliance, which calls for UPCS relocation, implicitly acknowledges these problems in bemoaning the much more limited disruption that would be faced by MDS users, and the resulting damage to MDS industry good will.[25]

B. The UPCS Band is Unsuitable For Purposes Other than UPCS.

In addition to the cost and disruption which counsel against reallocation of UPCS, the record reveals that the characteristics of the 1910-1930 MHz band make it unsuitable either for proposed 3G use or for the proposed allocation for multipoint distribution service ("MDS") or time division duplex ("TDD") services. Avaya and other commenters described the role played by the UPCS bands as a much-needed guard band, which preclude its use for advanced or

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20 *Sprint Scraps Project, Cuts Jobs*, (Oct. 17, 2001), http://news.cnet.com/news/0-1004-200-7561556.html.

21 *AT&T Wireless Pulls Plug On Fixed Wireless*, (Oct. 23, 2001), http://news.cnet.com/news/0-1004-200-7625956.html.

22 *Id.* at 6; NEC Comments at 7-9; WINForum Comments at 6.

23 Avaya Comments at 7; NEC Comments at 8-9.

24 Avaya Comments at 7.

25 Ad Hoc Comments at 10-11.

relocated services.[26] As Motorola explains, "allocation of [the UPCS] band for either 3G services or MDS . . . would result in considerable interference to PCS mobile devices and base stations in adjoining bands, and would require guard bands that effectively render use of the 1910-1930 MHz band impracticable for such applications."[27] Similarly, regarding possible TDD allocation, Motorola concluded that "interference problems would arise," and that the absence of "either additional filtering or coordination of system deployment . . . would completely rule out any possibility of TDD systems operating in the 1910-1930 MHz band."[28] Even commenters recommending possible 3G reallocation of the 1910-1930 MHz band recognize these interference concerns.[29] Thus, Avaya reiterates its position that reallocation of the UPCS bands should be rejected on technical grounds alone.

The analyses of Avaya and other manufacturers demonstrate that technical constraints similarly render band-sharing infeasible.[30] NEC explains that "[t]he operation of a single 3G device, which will emit at higher power levels than wireless PBX handsets, could easily disrupt all wireless PBX communications within one or more picocells. Multiple 3G devices could shut down an enterprise's entire wireless communications system."[31] Avaya noted that, at a minimum, UPCS users would face substantial new operational restrictions to accommodate co-

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26 Avaya Comments at 10; Motorola Comments at 14-19; WINForum Comments at 9; Comments of Verizon Wireless at 9-10 ("Verizon Comments").

27 Motorola Comments at 15.

28 *Id.* 15-16.

29 Comments of Ericcson at 7; *see also* Comments of Cingular at 12; Comments of the Cellular Telecommunications & Internet Association at 3; Comments of the Wireless Communications Division of the Telecommunications Industry Association at 4.

30 *See, e.g.,* Avaya Comments at 7-8 ("the Commission cannot 'grandfather' existing UPCS users and permit coexisting operations in the 1920-1930 MHz band without undermining the benefits afforded by this band."); NEC Comments at 6; Motorola Comments at 18.

31 NEC Comments at 6.

users.[32] Motorola goes further, concluding that "[i]f the Commission were to allocate the 1910-1930 MHz band for shared use by UPCS and either 3G or MDS systems, the resulting interference would make UPCS devices unusable."[33]

IV. CONCLUSION.

For the aforementioned reasons, Avaya reasserts its opposition to any reallocation of the UPCS band generally, an of the 1920-1930 MHz band specifically. As explained in detail above, the record clearly demonstrates widespread support for retaining the current allocation of the UPCS band. The FCC should grant greater flexibility to the 1910-1920 MHz band to further enhance the use of UPCS systems to provide vital communications services. Relocation of UPCS would be contrary to public policy, and could cause irreparable harm to the UPCS industry. Moreover, the technical characteristics of the UPCS band makes it unsuitable for use for advanced services, for MDS, or for TDD. Accordingly, Avaya urges the FCC to act quickly to reaffirm its commitment to the current allocation of UPCS spectrum.

Respectfully Submitted,

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32 Avaya Comments at 8.

33 Motorola Comments at 18.